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Nº 193

ECONOMIC INTELLIGENCE REPORT

ECONOMIC IMPLICATIONS
OF THE REORGANIZATION OF EDUCATION
IN THE USSR



CIA/RR 59-8

March 1959

CENTRAL INTELLIGENCE AGENCY

OFFICE OF RESEARCH AND REPORTS

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CONTENTS

	<u>Page</u>
Summary	1
I. Introduction	2
II. Nature of the Present System	3
A. General Education Schools	3
B. Technical and Vocational Schools	5
C. Universities and Institutes	6
III. Problems and Experiments During 1955-58	9
IV. Nature of the Current Reorganization	10
V. Economic Implications of the Reforms	14
A. Impact on the Size of the Labor Force	14
B. Effects on Productivity	16

Appendixes

Appendix A. Methodology	19
Appendix B. Source References	21

Tables

1. Enrollment in General Education Schools in the USSR, by Grade, 1950/51-1958/59	4
2. Number of Students in Technicums in the USSR, 1950/51-1958/59	7
3. Total Number of Workers Graduated from Schools of the Labor Reserve System in the USSR, 1950-58	7
4. Number of Students in Universities and Institutes in the USSR, 1950/51-1958/59	8
5. Estimated Population of the USSR Between the Ages of 7 and 24, 1958-65	13
6. Estimates of Total School Enrollment in the USSR, by Type of School, 1958/59 and 1965/66	13

Charts

Following Page

Figure 1. USSR: Educational System Before the Reorganization	4
Figure 2. USSR: Educational System After the Reorganization	12

ECONOMIC IMPLICATIONS OF THE REORGANIZATION OF EDUCATION IN THE USSR*

Summary

On 24 December 1958 the Supreme Soviet adopted a law on education which provides for a major reorganization of the educational system in the USSR to be started in 1959 and completed in 3 to 5 years. The most important provisions are as follows: (1) extension of the period of compulsory education from 7 to 8 years; (2) replacement of the existing 3-year academic high schools with 3-year, vocational-academic schools where students will work part-time; and (3) a great expansion of night schools, extension courses, and work-study programs at the secondary and university levels. Continued progress is to be made toward the goal of achieving universal secondary education. Whereas the total population of school and college age (7 to 24) will increase only 7 percent during the period of the Seven Year Plan (1959-65), the number of students (full-time and part-time) is to increase about 40 percent.

At present a 7-year education is compulsory in the USSR, and progress is being made toward the achievement of universal 10-year education, a goal originally set for 1960 under the Sixth Five Year Plan (1956-60). The current reforms are intended to relate the education and training of Soviet youth more closely to the work which they will do as adults and to solve the economic and social problems created in recent years by the failure of the schools to prepare youth for work. The academic curriculum of the elementary and secondary schools fitted their graduates primarily for college. Since 1952 the high schools have graduated more than 1 million persons annually, while the universities have admitted less than 500,000 annually. The high school graduates unable to enter college found it difficult to obtain jobs because they lacked both training and experience. Most of them were unwilling to accept manual jobs, and many others refused to work at all.

The timing of the reforms and the manner in which they are to be implemented also reflect the imperative need for the most efficient use of available manpower during the next few years, when labor will be in relatively shorter supply than in the recent past. Because of the low birth rates prevailing during and immediately after World War II, the population of working age (15 to 69) is expected to increase by only 11.3 million in 1959-65 compared with 18.0 million in 1952-58. The net additions to the labor force will be even smaller and will depend on the rates of labor force participation and on school enrollment.

* The estimates and conclusions in this report represent the best judgment of this Office as of 15 February 1959.

The Seven Year Plan calls for an increase of 11.9 million in the number of persons employed in the state sector (workers and employees). The reorganization of education will make an important contribution to the required enlargement of the labor supply by holding the proportion of the population of working age in school at about the present level. As a result of the educational reform, total additions to the labor force in 1959-65 will be about 8.4 million, an increase of 5 million above the number of additions expected if past enrollment trends had been followed. The remaining 3.5 million additional workers needed to meet the goal of the Seven Year Plan for the state sector must be obtained by transferring workers from collective farms, by reducing the armed forces, or by drawing more women and pensioners into the labor force.

More important than the effect of the educational reforms on the numbers of workers will be the effect on the quality of workers. The reorganization of education should have a highly favorable long-run effect on the skill of the labor force and on labor productivity. When the reform is completed, graduates from the elementary and secondary schools will enter the labor force with one more year of education than now, with direct work experience of some kind, and with a better psychological adjustment to their role as workers. Graduates from the universities also will have had 1 or 2 years of work experience in their field of specialization. The waste of labor resources resulting from the unemployment, vocational maladjustment, and general disorientation of youth in recent years will be greatly reduced. The supply of scientific and professional manpower -- indispensable for economic, scientific, and military progress -- will continue to increase, and its quality probably will not be impaired by the changes in the school system.

Putting the reforms into effect will be a complicated task and may take longer than the 3 to 5 years now planned. The period of transition will be difficult for students, teachers, and school administrators alike. When the reorganization is completed, however, the USSR should have a more efficient system of education that more closely meets the requirements of the Soviet state for worker-citizens equipped both technically and ideologically to fulfill state-determined roles.

I. Introduction.

The educational system in the USSR has the dual function of giving the population a general education and of providing trained manpower for the nation's farms and factories. Notable successes have been attained on both counts. The rate of literacy has increased rapidly during the past 30 years, and elementary education through the seventh grade is now compulsory for children of school age. The number of employed persons with university or secondary professional training

increased more than 13 times between 1928 and 1958 -- from 521,000 in 1928 to 7.5 million in 1958. The educational system has been particularly successful in supplying scientific and technical manpower.

In response to the critical need for the rapid creation of a large and technically trained professional class, the curriculum of Soviet elementary and secondary schools had become almost entirely academic, preparing graduates primarily for entrance into the universities rather than for jobs. The academic orientation of the education of Soviet youth created no problem as long as the number of secondary school graduates was relatively small and the great majority of them could enter the universities. In recent years, however, the number of secondary school graduates has been increasing much more rapidly than admissions to the universities. The young school graduates, unable to continue their education, are finding it difficult to obtain employment because they lack both training and experience. Many of them are refusing to go to work at all.

Soviet leaders have shown increasing concern over these economic and ideological problems of youth and are seeking the solution primarily through wholesale changes in the educational system. The reforms, which have been actively discussed by Soviet educators for almost a year, were approved by the Supreme Soviet on 24 December 1958 and will be initiated during the 1959/60 academic year. This report describes these reforms against the background of the present system and estimates their effects on the size of the labor force and on productivity.

II. Nature of the Present System.

The Soviet educational system is composed of a number of kinds of schools, each serving a specific purpose and a specific type of student. The various kinds of educational institutions fall into three categories, as follows: (1) general education schools, (2) vocational and technical schools, and (3) universities and institutes. The present system is depicted graphically in the chart, Figure 1.*

A. General Education Schools.

Elementary and secondary education for most Soviet children is provided in the basic 7- and 10-year schools. Children enter the first grade at the age of 7 and are obliged by law to remain in school through the seventh grade. In spite of being compulsory, a seventh grade education is not yet universal, because, as Khrushchev stated in September 1958, one-fifth of all children fail to complete the seventh grade. 1/** In 1952 the USSR announced the intention of establishing universal 10-year education by 1960. This goal, reaffirmed in 1955 as part of the Sixth Five Year Plan (1956-60), was partially implemented during 1952-58. By 1958, 10-year education was widespread in most urban areas, but 7-year education was more typical in the countryside.

* Following p. 4.

** For serially numbered source references, see Appendix B.

The old goal of universal 10-year education has been modified in both form and content by the impending reforms.

The total enrollment in general education schools by year and grade level is shown in Table 1. Total enrollment fell from 33.3 million in the 1950/51 academic year to 29.5 million in the 1958/59 academic year. This decrease reflects a decline in the total number of children of school age resulting from the low birth rates prevailing during World War II. The percentage of the school-age children in school rose steadily between 1951 and 1958. The swift expansion of secondary education is indicated by the fact that enrollment in grades 8 through 10 increased from 1.5 million to more than 4 million during the same period. Nevertheless, considerably less than one-half of all persons of high school age (14 to 17) were in school in the USSR in 1958 compared with nearly nine-tenths of such persons in the US.

Children attend school 6 days each week for 9 to 9-1/2 months. The number of weekly class hours ranges from 24 in the first grade to 36 in the tenth grade. The curriculum in Soviet schools is essentially academic, with heavy emphasis on the sciences and mathematics at the secondary level. Students graduating from the tenth grade have had 10 years each of mathematics and Russian language and literature, 7 years each of history and geography, 6 years each of foreign language and biology, 5 years of physics, and 4 years of chemistry. In

Table 1

Enrollment in General Education Schools in the USSR
by Grade a/
1950/51-1958/59

Million

Academic Year	Total	Grades			Undistributed Students in Special Schools
		1 to 4	5 to 7	8 to 10	
1950/51	33.3	19.7	12.0	1.5	0.1
1951/52	32.4	16.4	13.5	2.4	0.1
1952/53	30.9	13.4	14.1	3.3	0.1
1953/54	30.2	12.1	13.5	4.5	0.1
1954/55	29.5	12.7	11.6	5.1	0.1
1955/56	28.2	13.6	9.3	5.2	0.1
1956/57 <u>b/</u>	28.2	15.7	7.4	5.0	0.1
1957/58 <u>c/</u>	28.7	17.4	6.5	4.7	0.1
1958/59 <u>d/</u>	29.5	18.7	6.5	4.2	0.1

a. Except where otherwise indicated, all data are from source 2/.

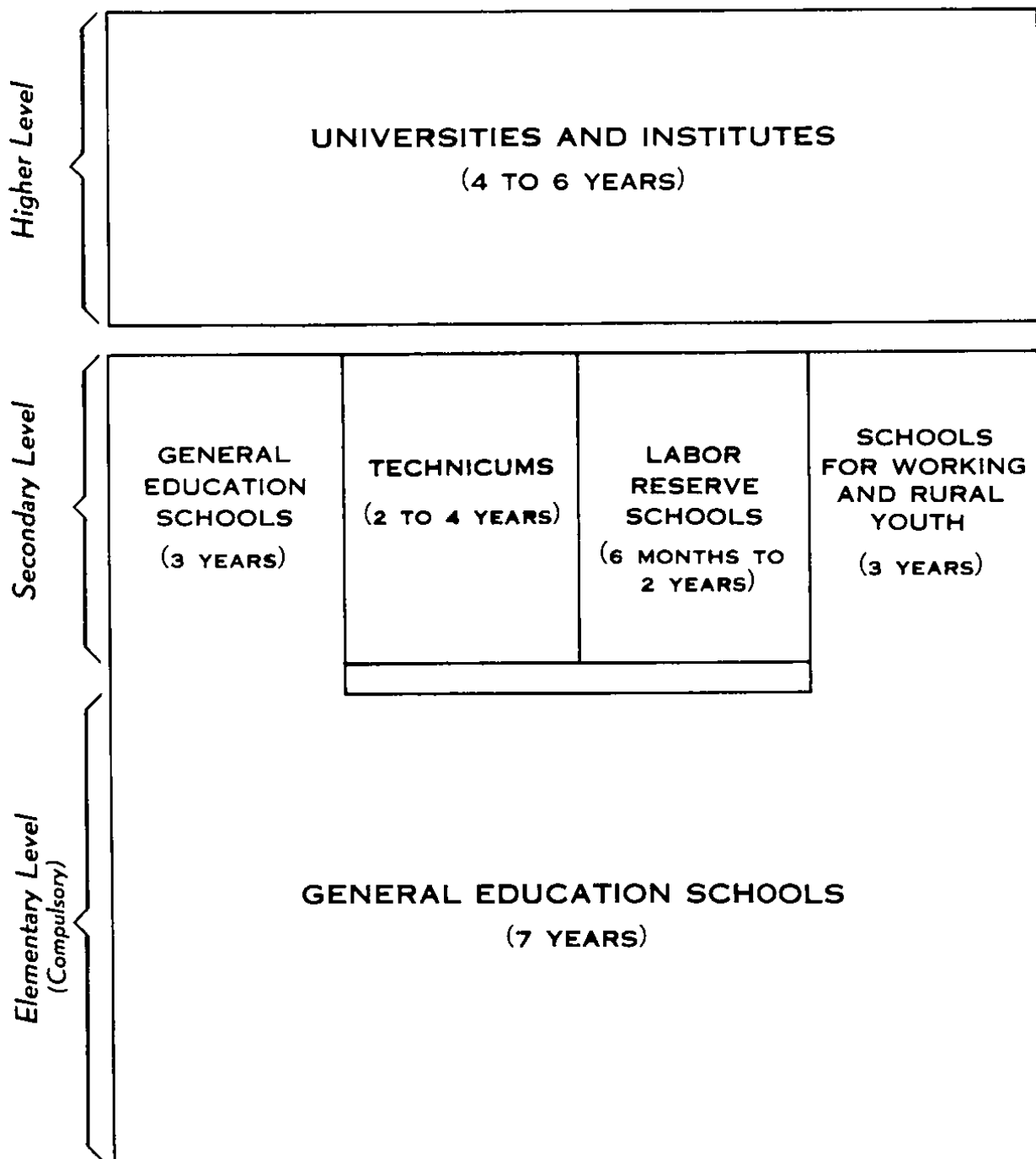
b. 3/

c. 4/. Distribution of the total by grades was estimated.

d. 5/. Distribution of the total by grades was estimated.

Figure 1

USSR EDUCATIONAL SYSTEM BEFORE THE REORGANIZATION



addition, all students in grades 5 through 10 spend several hours each week in polytechnical courses, such as manual training and mechanical drawing. Final, comprehensive examinations are given at the end of the seventh and tenth grades. At present, only about one-half of the seventh grade graduates continue their education by entering directly into the eighth grade in the regular secondary schools. Although the drop-out rate is high at the end of the seventh grade, it is apparently very low in grades 8 through 10.

A total of 1.6 million students graduated from the tenth grade of the regular schools in 1958. Only a small proportion of them (probably less than one-fifth) went directly into the universities and institutes -- total admissions were only 440,000 and included a substantial percentage of workers and veterans who had graduated in earlier years. Probably about one-fourth entered specialized secondary schools (technicums), and the rest had to go directly to work or into various kinds of short-term vocational courses.

In addition to the regular general education schools, there are several types of auxiliary schools established to serve specified categories of students and to offer essentially the same curriculum as the regular schools. The most important of these are the schools for working and rural youths, which operate part-time and accept students between the ages of 14 and 25. In 1957-58 these schools enrolled 1.6 million persons, more than half of them in grades 8 through 10. Schools for adults enrolled about 300,000.

B. Technical and Vocational Schools.

The USSR has an extensive network of specialized secondary schools (technicums) intended to provide graduates from the general education schools with intensive technical training in the various branches of the national economy. The technicums are operated by the regional economic councils (sovnarkhozy) under the general supervision of the Main Administration for Specialized Secondary Training of the Ministry of Higher Education of the USSR. The 3,642 technicums in operation in 1957 trained technicians* for all major branches of industry, such as metallurgy, machine construction, and textiles, and for agriculture. They also trained primary school teachers, nurses, and medical technicians. The technicums provide two types of programs, one for graduates of the 7-year schools and another for graduates of the 10-year schools. For the former, who now comprise about 30 percent of the total enrollment, the course of study is 4 or 5 years and includes much of the basic curriculum of the regular 8-year to 10-year schools. For the latter, the course of study is 2 or 3 years and is highly specialized. Education in the technicums is intended to be terminal, although a small percentage of the graduates eventually

* A technician is a semiprofessional working in "support" of professionally trained persons such as engineers, research scientists, and doctors. Technicians occupy such jobs as mechanic, machinist, draftsman, bookkeeper, laboratory technician, and radio technician.

get into the universities. The technicums prepare students for specific jobs to which they are assigned after graduation and in which they are legally obliged to remain for 3 years. 6/

In 1958, technicums had more than 2 million students enrolled and graduated 550,000. More than one-half of the students were being trained for industry, construction, transportation, and communications. The total enrollment in technicums has increased by almost two-thirds since 1950, and the number of persons studying by correspondence increased faster than the total enrollment. The number of students in technicums during 1950-58 is given in Table 2.*

In addition to the technicums, there are a large number of vocational schools operated by the Main Administration of Labor Reserves, which is attached directly to the Council of Ministers of the USSR. These labor reserve schools are intended to train skilled and semiskilled manual workers for industry and agriculture.** They accept students as young as 14; at present nearly all of those admitted have had at least a 7-year education in the general schools. Graduates of the labor reserve schools are assigned to jobs, which they must keep for 4 years and from which they cannot be dismissed. 7/

The three principal kinds of schools in the labor reserve system are as follows: (1) factory-plant schools, with courses from 6 months to 2 years, to train semiskilled workers for such jobs as stonecutter, painter, machine operator, and plasterer; (2) 2-year trade schools, which produce skilled workers primarily for work in ocean and river transport, in printing and publishing, and in the metallurgical, chemical, mining, and petroleum industries; and (3) special technical schools, established in 1954 to provide vocational training for tenth grade graduates of the regular schools who could not get into the universities and whose academically oriented education did not fit them for jobs. Approximately 650,000 persons graduated from these various schools in 1958, about 60 percent destined for jobs in industry and related branches and about 40 percent for jobs in agriculture. Data relating to graduations from the labor reserve schools during 1950-58 are presented in Table 3.***

C. Universities and Institutes.

The Soviet system of higher education is composed of universities and institutes organized and operated to prepare students for various specific professions. The general liberal arts colleges and

* Table 2 follows on p. 7.

** The formal technical and vocational schools train less than one-fourth of all workers taking industrial jobs for the first time. Most of the training of new, unskilled workers is still done by the enterprises themselves, partly in special plant schools with courses lasting up to 18 months, partly through individual apprenticeship, and partly through on-the-job training.

*** Table 3 follows on p. 7.

Table 2

Number of Students in Technicums in the USSR a/
1950/51-1958/59

<u>Academic Year</u>	<u>Thousand</u>		
	<u>Total</u>	<u>Admissions</u>	<u>Graduations</u>
1950/51	1,297.6	426.3	263.2
1951/52	1,368.9	458.4	280.6
1952/53	1,477.4	500.0	295.5
1953/54	1,645.5	558.0	332.3
1954/55	1,838.7	594.8	387.8
1955/56	1,960.4	587.5	510.1
1956/57 b/	2,012.2	594.6	517.0
1957/58 c/	1,900.0	N.A.	550
1958/59 d/	More than 2,000	N.A.	N.A.

a. Except where otherwise indicated, all data are from source 8/.

b. 9/

c. 10/

d. 11/

Table 3

Total Number of Workers Graduated from Schools
of the Labor Reserve System in the USSR a/
1950-58

<u>Year</u>	<u>Thousand</u>		
	<u>Total</u>	<u>Industry, Transportation, and Construction</u>	<u>Agriculture</u>
1950	493.4	493.4	
1951	365.3	365.3	
1952	326.7	326.7	
1953	323.7	323.7	
1954	698.0	353.6	344.4
1955	650.6	367.0	283.6
1956 b/	665	410	255
1957 c/	686	361	325
1958 d/	650	390	260

a. Except where otherwise indicated, all data are from source 12/.

b. 13/

c. 14/

d. 15/. The distribution of graduates between industry and agriculture was estimated.

humanistic curriculums so common in the US have no counterparts in the USSR. Communist ideology values higher education, not as an end in itself, but as a means for training professional manpower in the numbers consistent with over-all economic plans and with a philosophy consistent with prevailing Communist doctrine. Hence admission to higher educational institutions is highly selective and rigidly controlled. The desired distribution of professionals among the various fields is obtained by varying the enrollment quotas and the financial grants to students.

Full-time and part-time enrollment in universities and institutes in the USSR for the 1958/59 academic year totaled 2.15 million compared with 1.27 million for the 1950/51 academic year (see Table 4). The number of graduates increased from 201,000 in 1950/51 to 290,000 in 1957/58. Nearly one-half of the present enrollment consists of students attending evening classes or studying by correspondence. In 1958, 440,000 first-year students were admitted to the universities and institutes. Persons with a 10-year education or its equivalent are admitted to the universities on the basis of competitive examinations. Since 1957, preference has been given to persons who have worked at least 2 years before application. In 1958, for example, 70 percent of all new students had work experience. 16/

Table 4

Number of Students in Universities and Institutes in the USSR a/
1950/51-1958/59

<u>Academic Year</u>	<u>Total Enrollment</u>	<u>Admissions</u>	<u>Thousand</u>
			<u>Graduations</u>
1950/51	1,274.4	349.1	201.4
1951/52	1,356.1	374.4	219.2
1952/53	1,441.5	387.3	220.2
1953/54	1,562.0	430.8	234.8
1954/55	1,730.5	469.0	245.8
1955/56	1,867.0	461.4	259.9
1956/57 <u>b/</u>	2,001	458.7	257
1957/58 <u>c/</u>	2,010	423	290
1958/59 <u>d/</u>	2,150	440	N.A.

a. Except where otherwise indicated, all data are from source 17/.

b. 18/

c. 19/

d. 20/

The course of study lasts from 4 to 6 years, depending on the field. A standard curriculum is established for each field of study. Each curriculum is highly specialized, the only courses permitted

outside the field of specialization being, in general, courses in political philosophy and in foreign languages, if required for research in the major field. Graduates are assigned to jobs in the profession for which they were trained and are legally obliged to keep them for 3 years. 21/

III. Problems and Experiments During 1955-58.

The manner in which the goal of providing universal secondary education was implemented during 1952-58 produced a number of undesirable consequences which Soviet planners probably did not foresee when the goal was established. During 1954-58 the high schools graduated nearly 6.5 million young people who were equipped technically and ideologically for further academic work rather than for jobs in industry and agriculture. Less than one-half of the graduates were able to enter the universities and technicums because these schools were being expanded at a much slower rate commensurate with the anticipated needs of the economy for professional manpower. Because college education continued to be provided for a selected minority, most of the high school graduates were expected to go directly to work. It quickly became apparent, however, that many of these academically oriented youth did not wish to work, preferring instead to loaf or to study at home for another attempt at getting into college. Others refused to accept manual jobs, remaining unemployed for protracted periods while seeking white-collar jobs.

Graduates who were willing, either initially or ultimately, to accept manual jobs began to experience difficulties in getting them. Managers of enterprises refused to hire the young graduates because of their impractical training and because of legal limitations on the hours and kinds of jobs permissible for persons under 18 years of age. Unemployment among youth became a serious problem, particularly in 1956 and 1957. The Soviet press cited such examples as the following: in Belorussian SSR, 5,400 persons who had graduated in 1956 were still not employed in June 1957; 26,000 students who graduated from schools in the Ukrainian SSR in June 1957 were not at work in February 1958; and almost 25 percent of the 1957 graduates were idle in several oblasts in the Estonian SSR in January 1958. 22/ In an effort to reduce unemployment among youth, the Central Committee of the Communist Party and the Council of Ministers of the USSR issued a joint decree in 1957 ordering the responsible local agencies to draw up detailed plans for the placement of all secondary school graduates either in jobs or in schools. The local agencies were directed further to establish annual quotas for each enterprise fixing the number of such graduates that must be hired and trained. Although these measures encountered some resistance among managers of enterprises, they apparently have been successful in reducing unemployment among youth, inasmuch as the Soviet press has been relatively silent on the subject in recent months.

In addition to the allegations of failure specifically related to the secondary schools, the system of education as a whole has been

subjected to a mounting barrage of criticism during the past 2 years. Critics, the most notable of whom is Nikita Khrushchev, allege that the schools are "divorced from life"; that they do not teach respect for manual labor; that their curriculums, including those of the universities, devote too much time to theoretical subjects; that the graduates at all levels are unable to perform production jobs properly; and that the schools have failed to instill in their students a proper respect for the needs of the state.

Various measures were taken during 1955-58 to make the schools more responsive to current needs. Beginning with the 1955/56 academic year, the amount of time devoted to polytechnical courses in the elementary and secondary schools was increased considerably. A system of boarding schools with emphasis on vocational training was initiated in 1956. Also beginning with the 1956/57 academic year, 500 schools in the RSFSR began to use a new curriculum with even greater emphasis on vocational subjects. In these schools, children in grades 3 through 7 receive instruction in crafts and manual training and work in school workshops and on experimental farms attached to the schools. Students in grades 8 through 10 take courses in "Principles of Industrial and Agricultural Production" and engage in practice work in industrial enterprises and on collective farms. Under some of these experimental curriculums, senior students work 3 days each week and spend 3 days in school. In addition to the regular graduation certificate, these students receive a diploma certifying them to be qualified in a trade, such as electrical installation worker, milling machine operator, or tractor driver. The time required for this additional vocational training has been obtained by some slight reduction in hours spent on academic subjects, by lengthening the school week, and, in a few schools, by adding 1 or 2 grades. One-fourth of all schools in the RSFSR were supposed to operate under one or another of the experimental curriculums during 1957-58. In spite of many initial difficulties in implementation, the experiments have been considered successful on the whole.

This tinkering with the educational system during 1955-58 evidently did not go far enough toward removal of its shortcomings. In a speech to the Thirteenth Komsomol Congress in April 1958, Khrushchev called for a sweeping reorganization of the entire system and followed up with more detailed proposals in a "memorandum" of 21 September 1958. 23/ These proposals were incorporated in the "theses" approved by the Central Committee of the Party and the Council of Ministers on 16 November 1958 and enacted into law by the Supreme Soviet on 24 December. 24/

IV. Nature of the Current Reorganization.

The law on education approved on 24 December 1958 provides for the replacement of the present 7-year general education schools with compulsory 8-year "general education, labor-polytechnical" schools. Although not specifically mentioned, the curriculum in these schools probably will be patterned after that adopted by the experimenting

schools in the RSFSR in 1956. In spite of the greater number of class hours devoted to "practical" courses, this curriculum remains heavily weighted in favor of academic subjects, including foreign languages. There is also to be an "extensive enlistment of pupils in socially useful labor suitable for their age."

Graduates from the 8-year schools may receive a general secondary education in one of three ways. (1) They may go directly to work and enroll in night schools for workers and rural youth; these schools are to have a 3-year course of study, and the worker-students are to be allowed a shorter workweek. (2) They may enroll in a "general education, labor-polytechnical school with productive training" where for a period of 3 years they will receive a general education and learn a vocation; students in these schools will receive part-time job training in enterprises and collective farms or in school workshops and experimental farms. (3) They may enroll in a technicum which is equipped to provide a general education in addition to semi-professional training. Although the present 8-year to 10-year schools are to be converted gradually to one or another of these three types of secondary schools, many will be retained for several years in order to permit present students to graduate, thus providing a complement of students equipped to enter the universities during the transition period.* Boarding schools are to be retained and will provide both an 8-year and an 11-year education. The technicums are to be kept essentially in their present form, except that most of them will have to add academic subjects to the curriculum because the majority of their students will come directly from the eighth grade rather than from the tenth grade as they do now.

Under the new system, graduates from the eighth grade also may attend vocational-technical schools organized to train skilled workers for industry and agriculture. Courses will take 1 to 3 years, the length of the course depending on the complexity of the occupational training concerned. The schools, which are to be connected with industrial enterprises and collective farms, will become a form of "sheltered" workshop where the students will be paid wages and their output will be sold. These schools -- to be called vocational-technical schools -- are to replace the existing labor reserve schools but will remain under the control of the Main Administration of Labor Reserves.

* The USSR probably will find it necessary to retain some of these schools permanently in order to educate its brilliant children destined for careers in the arts and the theoretical sciences. Boarding schools also may be used for this purpose. Laying aside the matter of the numerically very small group of brilliant children, the secondary education system will have to provide training for the 500,000 to 600,000 students entering institutions of higher learning each year. It is possible that it will prove more feasible for the USSR to retain many of the present general secondary schools permanently (although perhaps changing their names) rather than to insist on their complete transformation or elimination.

With respect to higher education, the law specifies that plans are to be worked out whereby university students typically will work full time during a part of their enrollment period, acquiring the prescribed academic training in night school or by correspondence. In most technical institutes, for example, engineering students will follow this procedure during the first 2 years of study; in other courses the students will be in full-time residence at the university during the first 2 or 3 years and will then be sent to an enterprise for a year of work. Night schools and correspondence programs of the universities and institutes are to be greatly expanded, and "additional privileges" are to be accorded to persons who obtain all of their higher education while working. The chart, Figure 2,* depicts the educational system after the reorganization.

The reorganization of the school system is to begin with the 1959/60 school year and is to be completed in 3 to 5 years. Planning organizations concerned with education are to work out detailed plans for constructing new schools and reequipping existing ones; retraining teachers; employing pupils graduating from the various kinds of schools; employing student trainees; and relating the secondary, labor reserve, and higher schools to the production activities of individual industrial enterprises and collective farms. These are herculean tasks.

Data released by Soviet spokesmen indicate that the number of students in schools and colleges will increase considerably during 1959-65. Whereas the number of persons of school and college age (7 to 24) will increase about 7 percent by 1965 (see Table 5**), the number of students (full time and part time) will increase about 40 percent. Table 6*** gives estimates of the total enrollment in the various kinds of schools in the USSR for the academic years 1958/59 and 1965/66. According to these estimates, approximately 36 million children will attend the 8-year schools in 1965, about 97 percent of the population of elementary school age. A total of 9.3 million persons will attend the secondary general schools, 4.5 million in the labor-polytechnical schools, and 4.8 million in the schools for working and rural youth and adults. About 1 million students will be enrolled in the vocational-technical schools. Two million more will attend technicums. More than one-half of these students will be working full time or part time, as will two-thirds of the 3.3 million university students. The universities and institutes will graduate 2.3 million specialists during 1959-65 compared with 1.7 million during 1952-58. 25/ The labor reserve schools are supposed to train 5 million to 6 million skilled workers for industry and agriculture during 1959-65. 26/ The number of children in boarding schools is scheduled to increase from 180,000 at present to 2.5 million in 1965. 27/

The estimate of the total number of students in the various secondary schools in 1965 -- about 12 million -- exceeds the estimated population (11.7 million) in 1965 in the age group that would normally

* Following p. 12.

** Table 5 follows on p. 13.

*** Table 6 follows on p. 13.

Figure 2

USSR EDUCATIONAL SYSTEM AFTER THE REORGANIZATION

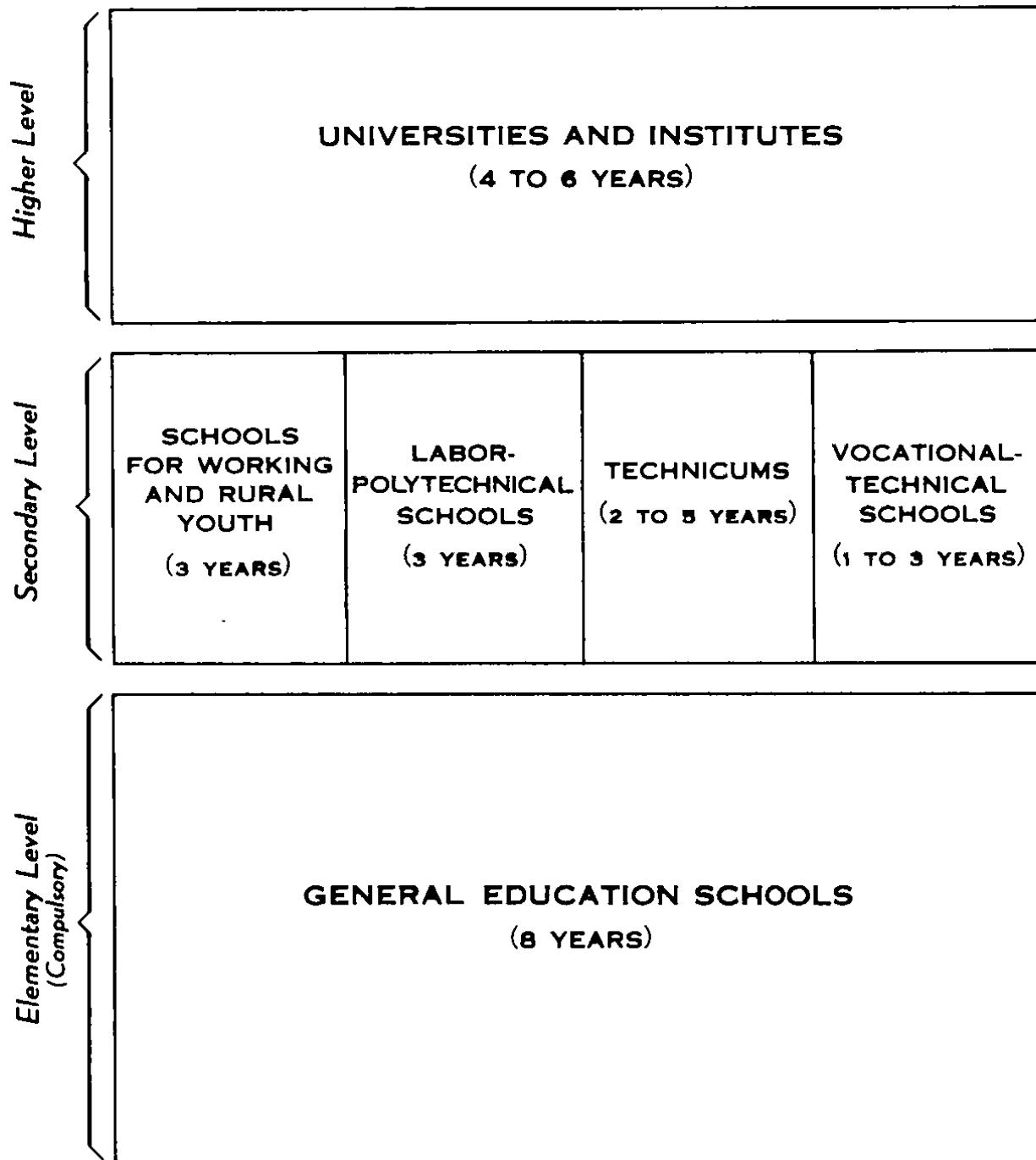


Table 5

Estimated Population of the USSR Between the Ages of 7 and 24 a/
1958-65

Million				
<u>Year</u>	<u>Total</u> <u>Age 7 to 24</u>	<u>Age 7 to 14</u>	<u>Age 15 to 19</u>	<u>Age 20 to 24</u>
1958	65.8	26.8	20.0	19.0
1959	67.0	28.4	18.3	20.3
1960	68.1	30.4	16.4	21.3
1961	69.0	32.6	14.9	21.5
1962	69.5	34.4	14.0	21.1
1963	69.5	35.5	14.2	19.8
1964	69.7	36.3	15.3	18.1
1965	70.4	37.1	17.0	16.3

a. Midyear figures. For methodology, see Appendix A.

Table 6

Estimates of Total School Enrollment in the USSR, by Type of School a/
1958/59 and 1965/66

Million		
<u>Type of School</u>	<u>1958/59</u>	<u>1965/66</u>
Total	<u>36.3</u>	<u>51.6</u>
Elementary schools	25.2 <u>b/</u>	36.0 <u>c/</u>
Secondary schools		
8 to 10 year schools	4.2	
Labor-polytechnical schools		4.5
Schools for working and rural youth and adults	2.2 <u>d/</u>	4.8
Vocational-technical schools	0.5	1.0
Technicums <u>e/</u>	2.0	2.0
Universities and institutes <u>e/</u>	2.2	3.3

a. For methodology, see Appendix A.

b. Seven years.

c. Eight years.

d. About one-third of the students in these schools are in grades 1 through 7. About one-fifth are adults.

e. Including students in night schools and correspondence students.

attend secondary schools (ages 15 through 17). Assuming that the interpretation of Soviet statements on which the estimate of enrollment was based is correct, several inferences may be drawn from the indication that the USSR expects a significant proportion of high school students to be over-age in 1965. This expectation suggests that the reorganization will retard the education of many teenagers during the first several years, when new schools must be constructed, teachers trained, and new curriculums established. The reorganization of the secondary schools is particularly complicated and expensive and probably will have a lower priority than the provision of 8-year schools for all children. If secondary schools are not available in sufficient numbers, a substantial proportion of the eighth grade graduates will have to go to work, resuming their education a year or two later when more school facilities have been provided.

The great increase in planned enrollment in secondary schools, even though nearly all of it is to be in night school enrollment, indicates that the USSR intends to proceed with the goal of providing a secondary education for all citizens who wish one. The majority will have to get this education while working full time or part time, and the process may be spread over a number of years. The government, nevertheless, will continue to provide the incentives and the facilities. Planned capital investment in education in 1959-65 is 51.6 billion rubles compared with 29.9 billion rubles invested in 1952-58. 28/ New capital investment per pupil will be about 43 percent greater.

V. Economic Implications of the Reforms.

The motivation for the prospective changes in the educational system is primarily economic. The reforms are intended to align the ideological and technical education and training of the future labor force directly with the anticipated needs of the economy and to correct the situation prevailing in recent years wherein the schools were producing in ever increasing numbers graduates suited for further academic work rather than for jobs. This condition is intolerable in a state where the purpose of education is to fit the youth for the economic role they will play as adults and where the access to higher education is rigidly controlled. The timing of the reforms and the manner in which they are to be implemented also reflect the imperative need for the most efficient use of all available manpower during the next few years, when labor will be in shorter supply than in the recent past.

A. Impact on the Size of the Labor Force.

Because of the low birth rates prevailing in the USSR during and immediately after World War II, the population of working age (15 to 69) is expected to increase by only 11.3 million in 1959-65 compared with 18.0 million in 1952-58. The annual increments will decline from 1.4 million in 1959 to 0.8 million in 1961, increasing thereafter to 2.3 million in 1965. In 1959-65 the labor force would increase by an estimated 3.1 million, however, if the rates of participation in the labor force of the various age-sex groups in the

population were to remain unchanged and if the number of persons 15 years of age and older in school full time were to increase at the same rate as in 1952-58 (81 percent). The additions would be 5 million if the proportion of the working age population in school were to increase at the same rate in 1959-65 as in 1952-58 (59 percent). The additions would be 8.2 million if the percentage of the population of working age in school (5.4 percent) does not change; there would then be 8.3 million such persons in school in 1965 compared with an estimated 7.6 million in 1958.

The Seven Year Plan (1959-65) calls for an increase of 11.9 million by 1965 in the number of persons employed in the state sector of the economy (workers and employees). ^{29/} This total is greater than the increase in the population of working age. The tight labor supply during 1959-65, relative to previous plan periods, means that the USSR must obtain workers for the state sector by transferring workers from the collective farms, by reducing the armed forces, by drawing relatively more women and pensioners into the labor force, or by forcing young people to go to work rather than to attend school. A combination of these methods probably will be used to achieve the planned employment level. The reorganization of education will make an important contribution to the required enlargement of the labor supply, although the reform is intended to accomplish much more than merely to help alleviate a brief period of labor shortage.

Estimates based on various figures from Soviet sources indicate that there will be approximately 8 million full-time students in the secondary schools and colleges in 1965* and that, of these, about 6 million will attend the new labor-polytechnical high schools and the vocational-technical schools, and about 2 million will be in the technicums and universities. Nearly all of the planned expansion in education above the elementary level will take place in the night schools and in the system of correspondence training in which the students are employed full time or part time on regular jobs. It is evident, therefore, that one effect of the reorganization of education, at least during the period of the Seven Year Plan, will be to keep the proportion of full-time students in the working-age population at about the present level. If there are 8 million full-time students of working age in 1965, the total addition to the labor force in 1959-65 will be 8.4 million, leaving 3.5 million to be obtained from other sources if the employment goal for 1965 is to be met. The indication that a significant proportion of the secondary school students in 1965 will be over-age suggests that a major part of the increase in school enrollments will occur during the latter part of the plan period. Graduates from the elementary schools who are unable to proceed immediately to a secondary school because of a lack of school facilities will help to swell the labor force during the years 1960-62, when increments to the working age population will be about 1 million annually.

* See Table 6, p. 13, above.

With the reorganization of education, the labor force thus will be larger during 1959-65 than would have been the case under the existing system, assuming that the school participation rate of the population of working age would have continued to rise. The labor force also will be larger than expected in the years after 1965, if the USSR continues to insist that an increasing majority of its youth obtain a secondary and college education in night schools or by correspondence. The temptation to do so may be great because the relatively loose labor supply after 1965 will make it easier to reduce the workweek from 40 hours to 35 hours as planned.

B. Effects on Productivity.

The reorganization of education in the USSR probably will have a highly favorable long-run effect on the skill of the labor force and on productivity. When the reform is fully implemented, young people will enter the labor force from the elementary and secondary schools with one more year of education than at present, with direct work experience of some kind and with a better psychological adjustment to their ultimate role as workers. Graduates from the universities and technicums also will have had 1 or 2 years of work experience in their field of specialization. Not only will the average new worker thus bring greater education and experience to his work, but also he will require less training on the job and will become fully productive more quickly. As the USSR proceeds with the task of achieving universal secondary education, moreover, the proportion of workers with a substantial foundation in science, mathematics, and technical drawing will increase -- a development that will add flexibility to the labor supply by facilitating occupational mobility.*

By aligning the technical and ideological training of youth more closely with the work which they will do as adults, the educational reform will remove a source of serious waste in the use of labor resources. The unemployment, vocational maladjustment, and general disorientation among young people in the USSR so prevalent in recent years should cease to be important problems. The fact that enterprises will be obligated to employ their quota of new school graduates each year as part of their annual plans and that public organizations are made responsible for carrying out these plans should insure that all young people either are working or are attending schools. Because they cannot avoid hiring the young graduates, managers of enterprises probably will see to it that they receive the necessary on-the-job training and are used as efficiently as possible. In the future, also, the graduates from the secondary schools typically will

* The educational reform also may help to solve the perennial problem of too many bureaucrats by curtailing the supply of persons without specific "practical" training and experience and by making it easier to transfer employees from government administrative jobs to jobs on farms and in industrial enterprises.

be 18 years of age (rather than 17 as now) and will no longer be subject to the shorter hours and job restrictions applicable to the employment of persons under 18.

There is no reason to assume that the educational reforms will reduce the supply of scientists and other professionals below the numbers required for continuing economic and scientific progress. The law on education stipulates that the detailed plans for implementing the reorganization must provide for supplying the universities with the necessary number of secondary school graduates, "bearing in mind that no interruption in the augmentation of the national economy with young specialist cadres is permitted." The 10-year schools will provide this quota at least through 1961. Although special secondary schools for the academically gifted student have not been specifically provided, such schools could be established if necessary through the medium of special technicums or the boarding schools. Moreover, graduates of the night schools and the labor-polytechnical high schools may be admitted directly to the universities, indicating that the academic content of the curriculums in these schools will qualify their graduates for college entrance examinations. The financial incentives and the prestige attached to professional work in the USSR will certainly continue to attract talented young people to the universities. Finally, the efforts of students at all levels to continue their education while working will be aided considerably by the current program to reduce the workweek throughout the economy.

The educational reform may contribute directly to increased productivity in a more technical sense. Under the new system, students at all levels will contribute unpaid labor as part of their projects. The products resulting from the student enterprises presumably will be counted in the total output of the economy, but the students probably will not be counted as workers. Productivity (output per worker), therefore, will be augmented. To the extent that student labor can be used on necessary civic projects or in harvesting crops, adult workers may be freed for other jobs. The state will be paying a price for this indirectly, however, in a part of the cost of an extra year of schooling.

Putting the educational reorganization into effect will be a complicated task and may well require more than the 3 to 5 years now planned. Teachers must be trained to handle vocational courses, particularly in the labor-polytechnical high schools. The programs of the universities and secondary schools will have to be integrated with the work of thousands of ordinary collective farms and industrial enterprises in order to establish the work-study sequences planned for students in these schools. Large numbers of new schools must be constructed, equipped, and supplied with teachers. The period of transition to the new system will surely be difficult for students, teachers, and school administrators. When the reorganization is completed, however, the USSR should have a system of education which more closely meets the needs of the state for worker-citizens equipped both technically and ideologically to fulfill state-determined

roles. The contemplated changes thus will result in a much more efficient school system in the light of the requirements of the Soviet society.

APPENDIX A

METHODOLOGY

The data pertaining to students in schools and colleges in the USSR given in Tables 1 through 4 are based on figures in Soviet statistical handbooks, plan fulfillment announcements, and published statements of Soviet officials.

The estimates and projections of the school-age population of the USSR in Table 5* are unpublished estimates of the US Bureau of the Census.

The estimates of school enrollment in the USSR for the 1965/66 academic year given in Table 6* were derived as follows:

(1) Elementary schools. The enrollment figure was given by a Soviet source. 30/

(2) Labor-polytechnical schools. The estimate was obtained by subtracting the elementary school enrollment (36 million) plus the figure for enrollment in schools for working and rural youth and adults cited by a Soviet source (4.8 million) from 45.3 million, the planned total enrollment in all such schools. 31/

(3) Schools for working and rural youth and adults. The figure was given by a Soviet source. 32/

(4) Vocational-technical schools. This estimate is an educated guess, based on the fact that the course of study in these schools ranges from 1 to 3 years and on the Soviet statement that the schools will graduate 700,000 to 850,000 students annually (5 million to 6 million during the 7-year period). 33/

(5) Technicums. It was assumed that the enrollment in technicums will remain at the present level because the number of annual admissions to these schools planned for 1959-65 is to be about the same as now. 34/

(6) Universities and institutes. The estimate is based on Soviet statements that, in 1965, 2 million students will be working while studying 35/ and on the assumption that the day school enrollment will increase slightly above the present level of about 1.2 million.

* P. 13, above.

APPENDIX B

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